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ESCAP Regional Energy Development Programme (REDP)
Regional Network for Small Hydropower (RN-SHP)

Technical Advisory Group (TAG)
First Meeting

Hangzhou, China, 11 - 13 December 1984

COUNTRY PAPER: PHILIPPINES*

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1. Priority subjects

i) Expert Group Meetings

a) Assessment of prior accomplishments and present programme

b) Plans and programme for the future (e.g. establishment of a special school for hydropower planning, engineering, etc.)

c) Funding requirement and sources.

ii) Workshops and Training Courses

The Second Meeting of the ASEAN Working Group on Co-operation in Micro/Mini-hydro Development identified the priority areas for its training programme as follows:

a) Technical Planning

- Hydrology
  - Correlation methods
  - Appropriate flow measuring techniques

- Geotechnics (modern)
  - Latest developments in low-cost methods applicable to micro/mini-hydro development.

- Socio-economic aspects
  - Techniques on the determination of tangible and intangible benefits.

- Feasibility study
  - Development of a simplified and standardized format to meet the requirements for decision-making purposes.

b) Construction

- Engineering design
  - Low-cost, simple design utilizing to the maximum content possible locally available materials.
  - Recommendations for the standardization of civil and electro-mechnical works components.
- Contract administration
  - Engineering and supervision
  - Construction
  - Procurement matters
- Local manufacturing capability

c) Management

- Development of effective management systems for micro/mini-hydro programmes.
- Operation and maintenance.

The Philippines feels there is also a need for training on environmental impact assessment and mitigation. Planners and decision makers should be able to identify the critical areas which may be adversely affected by the mini-hydro project and (a) see if something can be done to remedy the effects; and (b) decide whether to push through with the project or not.

2. Priority Subject Areas for Joint Co-operative "Research" Projects

i) Standardization of civil and electro-mechanical works design. The Philippines is currently working on this project, in co-operation with its consultants.

ii) Hydrology - setting up of stream gaging stations; gathering of rainfall and precipitation data; and use of correlation method.

iii) Geology - sub-surface exploration, particularly for the dam, intake, headrace and power plant locations; erosion protection and drainage design for headrace, penstock and other structures.

iv) Diversion Dam - types of dam and criteria for the type of gate to be used.

v) Intake Structure - sediment transport and siltation (maintenance).

vi) Headrace - selection of type of headrace (open or close; steel, concrete or fiberglass).

vii) Surge Protection - design of surge pressure protection for forebay, surge shaft and surge tank.

viii) Penstock - type/material to be used for penstock (steel or fiberglass, etc.).

ix) Power Plant - economical design of power plant using locally available material.

x) Equipment Selection - type and size of mini-hydro equipment units to be used to maximize site potential based on latest performance data.

3. Areas and Types of Activities where the Philippines could take the Lead for Organizing Projects

i) Training

The first and second training workshops on SHP for Asia-Pacific region were held in Hangzhou, People's Republic of China in 1983 and 1984, respectively. A total of twenty six (26) participants from nine (9) countries attended the two (2) training workshops.

Decentralization of training activities may allow to conduct more training courses and workshops in a year. A larger number of people can participate. Some ways in which training activities can be decentralized are briefly discussed below:

a) Holding of training courses outside China.

b) Grouping the member countries by region (or according to certain criteria such as level of SHP technology used, status of SHP programme, etc.); and holding the training courses by region, instead of having all the member-countries participate in every training. This will be more effective since the discussions and examples will focus on areas/problems which are common to the group/region.

c) Establishment of training units, either government agencies or specified groups, in selected member-countries to organize training workshops. One training unit per region/group may be organized which will take charge of the training activities of the region. Training courses may be conducted in different regions/groups simultaneously; they may also be conducted from one region to another (which may be more economical). For example, a group of lecturers may conduct a course in region A. This may be composed of foreign lecturers and experts from region A. The course can be revised to suit the conditions of region B and experts (from region B) can be invited as resource persons.

d) Sub-contracting the training courses to government utilities or specialized groups of member-countries. They may be invited to submit proposals on specific topics. UNIDO/HRC can evaluate the proposal and decide who will conduct the course. The courses can be implemented in the same manner as c) above.

ii) Video Tapes on SHP

HRC has made nine (9) video tapes of its activities for the past years. These tapes have to be reviewed first before work on other tapes can be started. Some scenes/shots from these tapes can be used in future projects. As discussed by the Consultation Mission during its visit to the Philippines, a group of video and SHP experts may be invited to meet and discuss the preparation of video tapes. This group can determine the coverage, the number of tapes, objectives and other criteria/guidelines for the video tapes. Implementation can be done in two ways:

a) Given the guidelines set up during the meeting, HRC can implement the project, hiring video experts as needed. This can be done in co-operation with countries that will be covered in making the tapes.

b) Sub-contract the making of tapes to a member-country or a group of video/SHP experts.

It is recommended that at least three (3) tapes be done at a time. Some shots needed by three (3) films can be taken in the same sites, hence, minimizing travel cost and time.

4. Suggestions to Facilitate the Implementation of Information Exchange among Member Countries

The ASEAN Working Group on Micro/Mini-Hydro Development has set up the MHINEX - Micro/Mini-Hydro Information Exchange System, where member countries are expected to submit quarterly, various data/information

agreed upon during its second meeting. MHINEX (for ASEAN) and other regional organizations can be tapped by HRC to send contributions or other data it needs for its publications. This will entail less time and cost, and may be done more efficiently.

During the meetings (senior experts, TAG, etc.) the participants may agree to submit certain data/information that HRC needs, and the frequency of submittals. A deadline can also be set for regular publications. For example, members should know when they should submit their contribution if they want it to be included in the first quarter issue of the newsletter.